

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
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25 FEB 2005



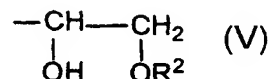
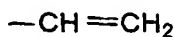
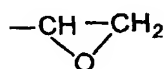
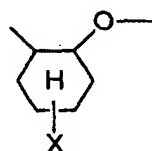
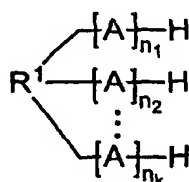
(43) International Publication Date  
18 March 2004 (18.03.2004)

PCT

(10) International Publication Number  
WO 2004/023210 A1

- (51) International Patent Classification<sup>7</sup>: G03F 7/00, B81C 1/00, C08G 59/02
- (21) International Application Number: PCT/JP2003/011028
- (22) International Filing Date: 29 August 2003 (29.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
2002-252920 30 August 2002 (30.08.2002) JP
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- (81) Designated States (national): CA, CN, KR, SG, US.
- (84) Designated States (regional): European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR).
- Published:  
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR PRODUCING A PATTERN FORMATION MOLD



(57) Abstract: The method for producing a pattern formation mold includes: a first step of applying to a substrate a radiation-sensitive negative-type resist composition containing an epoxy resin represented by formula (I): (wherein R<sup>1</sup> represents a moiety derived from an organic compound having k active hydrogen atoms (k represents an integer of 1 to 100); each of n<sub>1</sub>, n<sub>2</sub>, through n<sub>k</sub> represents 0 or an integer of 1 to 100; the sum of n<sub>1</sub>, n<sub>2</sub>, through n<sub>k</sub> falls within a range of 1 to 100; and each of "A"s, which may be identical to or different from each other, represents an oxycyclohexane skeleton represented by formula (II): (wherein X represents any of groups represented by formulas (III) to (V): and at least two groups represented by formula (III) are contained in one molecule of the epoxy resin)), along with a radiation-sensitive cationic polymerization initiator, and a solvent for dissolving the epoxy resin therein; a second step of drying the substrate coated with the radiation-sensitive negative-type resist composition, to thereby form a resist film; a third step of selectively exposing the formed resist film to an active energy beam according to a desired pattern; a fourth step of heating the exposed resist film so as to enhance a contrast of a pattern to be formed; a fifth step of developing the heated resist film, to thereby remove the unexposed area of the resist film through dissolution, thereby forming a patterned layer; and a sixth step of applying to the patterned layer a material other than that of the patterned layer such that spaces present in the patterned layer are filled, at least to some height, with the material, to thereby form a second layer, and removing the second layer, to thereby yield a pattern formation mold.

WO 2004/023210 A1

## INTERNATIONAL SEARCH REPORT

International Application No.

PCT/JP 03/11028

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G03F7/00 B81C1/00 C08G59/02

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G03F B81C C08G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ, WPI Data

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4 565 859 A (MURAI ET AL.) 21 June 1986 (1986-06-21) column 2, line 42 -column 3, line 57; claims 1,7,13 column 9, line 58-66 ---	1-10
Y	PATENT ABSTRACTS OF JAPAN vol. 120, no. 40, 5 February 1988 (1988-02-05) & JP 62 187720 A (DAICEL CHEM. IND., LTD.), 17 August 1987 (1987-08-17) abstract ---	1-10
Y	WO 01 44875 A (NANOGEN, INC.) 21 June 2001 (2001-06-21) page 5, line 24 -page 6, line 5; claims 1,2,6,34 --- -/-	1-10



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Patent family members are listed in annex.

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Date of the actual completion of the international search

15 December 2003

Date of mailing of the international search report

19/12/2003

Name and mailing address of the ISA

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Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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Information on patent family members

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